REMARKS

Claims 1, 2, 5 to 12, and 14 to 21, as amended, appear in this application for the Examiner's review and consideration. Claims 3 and 13 are canceled by this Amendment without prejudice. The amendments are fully supported by the specification and claims as originally filed. Therefore, there is no issue of new matter. In addition, the amendments to the independent claims add recitations that elaborate on the structure of the presently claimed invention, and, thus, do not affect the scope of the claims. The amendments only further clarify the claimed invention.

The specification stands objected to for the reasons set forth on page 2 of the Office Action.

In response, Applicant submits that the specification has been amended to add a brief description of the drawing. Support for the amendment to the specification can be found in Example 6, at page 20, of the specification and in Figure 1.

In response to the objections to the specification at page 3, line 25, Applicant submits that one of ordinary skill in the art, following the teaching of the present specification, will understand that the disclosed polysiloxane, having the structural formula,

$$\begin{array}{c}
R1 \\
\downarrow \\
R2 \longrightarrow O \xrightarrow{\uparrow} Si \longrightarrow O \xrightarrow{\uparrow}_{n} R2 \\
\downarrow \\
R1
\end{array}$$

is alkoxy-functional and branched. At page 3, line 25, the specification teaches that the disclosed polysiloxane is a branched alkoxy-functional polysiloxane. On page 4, the specification teaches that each R1 is independently selected from the group consisting of alkyl, aryl, alkoxy, and OSi(OR3)₃ groups, where each R3 independently has the same meaning as R1, and each R2 is independently selected from the group consisting of hydrogen, alkyl, and aryl groups. Therefore, those skilled in the art will understand that the R1, R2, and R3 present in the disclosed polysiloxane must provide the disclosed alkoxy-functionality and branching, such that the disclosed branched alkoxy functional polysiloxane is necessarily branched and alkoxy functional.

As will be understood by those skilled in the art, the alkoxy-functionality is provided as follows:

At least one of R1, R2, and R3 in the disclosed polysiloxane must be a group that provides alkoxy-functionality to the disclosed alkoxy-functional polysiloxane. That is at least one R1 group in the disclosed polysiloxane is an alkoxy group, and/or at least one R2

group is an alkyl group, and/or at least one R3 group is an alkyl group. If one of ordinary skill in the art was to take the structural formula

$$\begin{array}{c|c}
R1 \\
\downarrow \\
R2 \longrightarrow O \longrightarrow I \text{Si} \longrightarrow O \longrightarrow I_n R2 \\
\downarrow \\
R1
\end{array}$$

out of the context of the present specification, it would be understood that a polysiloxane having that structure was not necessarily alkoxy-functional. However, as the specification specifically teaches that the disclosed polysiloxane is alkoxy-functional, one of ordinary skill in the art will understand that the disclosed polysiloxane contains one or more groups that provide the alkoxy-functionality, as taught by the present specification. Therefore, the teaching that the disclosed polysiloxane is alkoxy-functional will not cause confusion for those skilled in the art.

Similarly, although the structural formula

$$\begin{array}{c|c}
R1 \\
| \\
R2 \longrightarrow O \longrightarrow I_{\underline{n}} R2
\end{array}$$

may be linear if taken out of the context of the specification, the recitation of the term "branched polysiloxane" in the specification requires the polysiloxane to be branched. As will be understood by those skilled in the art, branching is provided as follows:

The disclosed branched polysiloxane comprises polysiloxane chains having repeating units of formula

with terminal R2-O and R2 groups. As discussed above, the specification specifically teaches that the R1 groups are independently selected from the group consisting of alkyl, aryl, alkoxy, and OSi(OR3)₃ groups. Those skilled in the art will also understand that, when at least one of the R1 groups in the polysiloxane is an OSi(OR3)₃ group, the disclosed polysiloxane chains will be branched.

Therefore, one of ordinary skill in the art will understand that the teaching of a branched polysiloxane in the specification requires that at least one R1 group of the disclosed polysiloxane is an OSi(OR3)₃ group, thereby providing the required branching. In light of the specification, those skilled in the art will understand that the disclosed polysiloxane, having the structural formula

$$\begin{array}{c}
R1 \\
| \\
R2 \longrightarrow O \longrightarrow Si \longrightarrow O \longrightarrow R2 \\
| \\
R1
\end{array}$$

is not linear, as the specification specifically teaches that the polysiloxane of the invention is branched. Therefore, the disclosed polysiloxane must contain at least one OSi(OR3)₃ group. The OSi(OR3)₃ group provides the required branching. Accordingly, the teaching of a branched polysiloxane at page 3, line 25, of the present specification will not cause confusion for those skilled in the art.

Therefore, the specification has been amended to add a Brief Description of the Drawings, and the terms "branched" and "alkoxy-functional" will not cause confusion to one of ordinary skill in the art. Accordingly, it is respectfully requested that the Examiner withdraw the objections to the specification.

Claims 1 to 3 and 5 to 21 stand objected to for the reasons set forth on pages 2 and 3 of the Office Action.

In response, Applicant submits that claim 1 has been amended, as follows:

The recitation of "Rl" has been changed to --R1-- at line 9;

The recitation of "hydrogen and alkyl and aryl" has been changed to --hydrogen, and alkyl, and aryl-- at line 10;

The hyphens ("-") have been deleted from lines 3, 14, and 15; and

The recitation of "alkyl, aryl, and alkoxy groups having up to six carbon atoms" has been changed to --alkyl groups having up to six carbon atoms, aryl groups having up to six carbon atoms, alkoxy groups having up to six carbon atoms-- at line 8;

The recitations of "characterised in that" throughout the claims has been changed to "wherein."

Accordingly, it is respectfully requested that the Examiner withdraw the objections to claims 1 to 3 and 5 to 21.

Claims 3 and 13 stand objected to for the reasons set forth on page 3 of the Office Action.

In response, Applicant submits that claims 3 and 13 have been canceled, as suggested by the Office Action. Accordingly, it is respectfully requested that the Examiner withdraw the objection to claims 3 and 13.

Claims 1 to 3 and 5 to 21 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the reasons set forth on pages 3 and 4 of the Office Action.

In response, as discussed above, Applicant submits that the disclosed polysiloxane of formula

is not linear when at least one R1 group is of formula OSi(OR3)₃. Such a polysiloxane is branched when at least one R1 group is of formula OSi(OR3)₃. As claim 1 recites that the polysiloxane is branched, those skilled in the art, following the teaching of the present specification, will understand that at least one R1 group in the claimed polysiloxane is an OSi(OR3)₃ group. Therefore, those skilled in the art will not be confused by the recitation in the claims that the polysiloxane is branched.

With regard to the recitation of "alkoxy-functional" in claim 1, as discussed above, Applicant submits that claim 1 recites a branched alkoxy-functional polysiloxane having the formula

$$\begin{array}{c}
R1 \\
\downarrow \\
R2 \longrightarrow O \longrightarrow I \text{Si} \longrightarrow O \longrightarrow I_{n} R2 \\
\downarrow \\
R1
\end{array}$$

where each R1 is independently selected from the group consisting of alkyl groups having up to six carbon atoms, aryl groups having up to six carbon atoms, alkoxy groups having up to six carbon atoms, and OSi(OR3)₃ groups, wherein each R3 independently has the same meaning as R1, and each R2 is independently selected from the group consisting of hydrogen, alkyl, and aryl groups having up to six carbon atoms.

As the claim specifically recites, and specification clearly teaches that the disclosed polysiloxane is alkoxy-functional, one of ordinary skill in the art will understand that at least one of R1, R2, and R3 in the disclosed polysiloxane must be a group that provides the required alkoxy-functionality to the claimed alkoxy-functional polysiloxane. The recitation of alkoxy-functional will not cause confusion for those skilled in the art.

With regard to the recitation of "the olefinically unsaturated monomers" in claims 7, 8, and 17 to 21, Applicant submits that that term has been changed to --olefinically unsaturated monomers--. Thus, an antecedent basis is not required.

Therefore, the claims particularly point and distinctly claim the subject matter Applicant regards as the invention, and, thus, meet the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 3 and 5 to 21 under 35 U.S.C. § 112, second paragraph.

Claims 1 to 3 and 5 to 21 stand rejected under 35 U.S.C. § 102(b), as being anticipated by International Application Publication No. WO 99/31179 to Yang, where the references in the Office Action are based on the corresponding U.S. Patent No. 6,403,711, for the reasons set forth on pages 4 and 5 of the Office Action.

In response, Applicant submits that the present claims, as amended, are directed to an Ambient temperature curable coating composition. The claimed composition comprises a branched alkoxy-functional polysiloxane having the formula

$$\begin{array}{c|c}
R1 \\
 & \\
R2 \longrightarrow O \longrightarrow Si \longrightarrow O \longrightarrow R2 \\
 & \\
R1
\end{array}$$

where each R1 is independently selected from the group consisting of alkyl groups having up to six carbon atoms, aryl groups having up to six carbon atoms, and OSi(OR3)₃ groups, each R3 independently has the same meaning as R1, and each R2 is independently selected from the group consisting of hydrogen, alkyl, and aryl groups having up to six carbon atoms. In addition, n is selected such that the molecular weight of the polysiloxanes is in the range of from 200 to about 5,000. The composition also comprises an amino-functional catalyst, and an acrylic polymer, which is substantially free of functional groups that can react with the polysiloxane or with the catalyst in the coating composition. The coating composition comprises more than 60% by weight solids.

In contrast to the presently claimed invention, Yang discloses a polysiloxane fluid, generally containing a total of two or more reactive functional groups on the polymer chain that are preferably at the terminal portion of the disclosed polysiloxane. The disclosed polysiloxane fluid is an organo-polysiloxane of the formula

$$(R)_{3-m}(X)_m Si \longrightarrow O \xrightarrow{\begin{pmatrix} R^1 \\ Si & O \end{pmatrix}_n} Si(X)_m (R)_{3-m}$$

where R^1 and R^2 are independently alkyl groups. The disclosed reactive functional groups (X) are OH, or OR^3 , or $N(R^4)$, or

$$-C$$
 (enoxy), or $-C$ R^8 (acyloxy), or $-C$ R^8 (acyloxy), or $-C$ R^{11} C R^{10} (aminoxy),

or an

$$\begin{array}{ccc}
R^5 & O \\
\parallel & \parallel \\
N & C & R^6
\end{array}$$

group, where R³ through R¹² are independently alkyl. The one or more R groups are independently an alkyl or an aromatic or an alkyl-aromatic.

As will be recognized by those skilled in the art, none of the groups R and R¹ to R¹² will provide a branched polysiloxane, as presently claimed. As discussed above, branching in the presently claimed polysiloxane results from the presence of at least one OSi(OR3)₃ group in the polysiloxane. The presence of the OSi(OR3)₃ group or groups provides the branching in the disclosed polysiloxane. Without the presence of a OSi(OR3)₃ group, a polysiloxane of formula

$$(R)_{3-m}(X)_m Si \longrightarrow O \xrightarrow{R^1} Si(X)_m(R)_{3-m}$$

$$R^2 \xrightarrow{n}$$

must be linear. Therefore, Yang does not disclose the branched polysiloxane of the presently claimed invention.

As Yang does not disclose the presently claimed branched polysiloxane, the present claims are not anticipated by that reference. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 3 and 5 to 21 under 35 U.S.C. § 102(b) over Yang.

Applicant thus submits that the entire application is now in condition for allowance, an early notice of which would be appreciated. Should the Examiner not agree with Applicant's position, a personal or telephonic interview is respectfully requested to discuss any remaining issues prior to the issuance of a further Office Action, and to expedite the allowance of the application.

A separate Petition for Extension of Time is submitted herewith. Should any other fees be due, however, please charge such fees to Deposit Account No. 11-0600.

Respectfully submitted,

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